B.V.Sc. & A.H. (Second Professional) Examination – 2024
Veterinary Microbiology Paper -I

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-1 (General & Systematic Veterinary Bacteriology)
Unit-2 (Veterinary Mycology)
Unit-3 (Microbial Biotechnology)

Instructions:

1) Attempt all questions
2) Answer of all questions is to be written in the space provided along with the question in question-booklet.
3) Overwriting is not allowed in the objective type question.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 Unit of measurement of bacteria is_____.

1.2 _____ is considered as father of bacteriology.

1.3 _____structures is not present in all bacteria and life is possible without that structure.

1.4 _____is a process, which remove or destroy all forms of all microorganisms.

1.5 Lacto phenol cotton blue method of staining is used to stain_____.

1.6 Group of bacteria inhibited in their growth or even killed in presence of oxygen is known as_____

1.7 _____ is the example Gram's positive cocci in chain

1.8 Extra chromosomal DNA in bacteria is known as_____

1.9 _____ is the most commonly use agar medium for antibiotic sensitivity test.

1.10 Yeast are reproduce by _____ mechanism.

1.11 _____structure of bacteria responsible for the motility of bacteria.

1.12 _____is the group of bacteria which favours the low temperature (0-15 ^{0}C) for their growth.

1.13 Cavity slide in microbiology laboratory is generally used to detect _____ of bacteria.

1.14 The name *Pasteurella multocida* was given to honour the scientist _____.

1.15 The generation time of T. B. bacillus is _____

1.16 In sporulation process, each bacterium produce_____ number of spore.

1.17 According to cellular type, morphology of yeast is_____.

1.18 Most commonly, capsule of bacteria are viewed by _____staining.

1.19 Techoic acid is present in cell wall of _____ group of bacteria.

1.20 The viable count of bacteria is maximum during _____phase.

Q.2 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: **(20x0.5 = 10)**

2.1 In forensic science which of the following is used? ( )
1. Bacterial cloning
2. DNA foot printing
3. DNA fingerprinting
4. DNA cloning

2.2 Biopatents are _____ ( )
1. Right to use invention
2. Right to use biological entities
3. Right to use products
4. Right to use process

2.3 Adenine is ( )
1. Purine
2. Pyrimidine
3. Nucleoside
4. Nucleotide

2.4 Bacterial plasmid contains ( )
1. RNA
2. RNA + protein
3. DNA
4. Photosynthetic structures

2.5 Chemical Knives/ molecular scissors of DNA are ( )
1. Restriction endonucleases
2. Polymerases
3. Ligases
4. Transcriptases

2.6 Bacteria responsible for food poisoning ( )
1. *S. aureus*
2. *Clostridium botulinum*
3. *Bacillus cereus*
4. All of these

2.7 Chlamydia can be stained with following stains except: ( )
1. Gram's stain
2. Macchiavello stain
3. Gimenez stain
4. Castaneda stain

2.8 Medusa head colonies are characteristic feature of….. ( )
1. *Rickettsia* spp.
2. *Bacillus anthracis*
3. *Clostridium botulinum*
4. *Listeria spp*

2.9 In which disease post mortem of carcass is prohibited? ( )
1. Haemorragic septicemia
2. Rinder pest
3. Anthrax
4. Brucellosis

2.10 Source of bacitracin is ( )
1. *Streptomycin rimosus*
2. *Bacillus subtilis*
3. *Streptomyces aureqfaciens*
4. *Bacillus polymyxa*

2.11 Infectious coryza is a disease….. ( )
1. Disease of bird
2. Disease of young animals
3. Disease of wild animals
4. All of the above

2.12 Wooden Tongue in cattle is seen in- ( )
1. Actinomycosis
2. Botriomycosis
3. Haemorrhagic Septicemia
4. Actinobacillosis

2.13 Cold enrichment is required for the isolation of ( )
1. *Listeria monocytogenes*
2. *Erysipelothrix*
3. *S. aureus*
4. *Clostridium tetani*

2.14 Dysgonic species of Mycobacterium is ( )
1. *M.bovis*
2. *M.avium*
3. *M.tuberculosis*
4. *M.phlei*

2.15 Sulphur granules in yellowish pus is seen in- ( )
1. Glanders
2. Strangles
3. Staphylococcosis
4. Actinomycosis

2.16 Brooder's pneumonia in poultry is caused by- ( )

1. *Candida albicans*
2. *Aspergillus fumigatus*
3. *Haemophilus paragallinarum*
4. *Pasturella multocida*

2.17 Ring worm infection is caused by….. ( )

1. *Nocardia* spp.
2. *Trichophyton* spp.
3. *Candida* spp.
4. *Dermatophillus* spp

2.18 *Cryptococcus neoformans* can be easily isolated from ( )

1. Cats
2. Dogs
3. Horses
4. Pigeons

2.19 The fungus associated with ear infection of dogs is ( )

1. *Rhinosporidium seeberi*
2. *Aspergillus fumigatus*
3. *Malassezia pachydermatis*
4. *Cryptococcus neoformans*

2.20 Wood's lamp is most effective in demonstrating fluorescence in hair infected with ( )

1. *Trichophyton verrucosum*
2. *Microsporum gypseum*
3. *Microsporum canis*
4. *Trichophyton mentagrophytes*

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Enlist four different shapes of bacteria

3.2 What is selective media?

3.3 Enlist the various organisms responsible for causing mastitis in cattle

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3.4 Explain the principle of California mastitis test

3.5 Why gram negative bacteria stain pink in color?

3.6 What is the role of sex pilli in bacterial conjugation?

3.7 Define western blotting

3.8 Define bioinformatics

3.9 Why bacterial spore require high temperature for its killing?

3.10 Give the full form of IMViC test.

3.11 Why fungal diseases are more common during monsoon?

3.12 Enlist the different pigments produce by *Psedomonas* spp

Q.4 Attempt any <u>six</u> out of the following eight questions. Answer of each question should be in 8 to 10 lines. (6 x 6.0 = 36)

4.1 Explain brief about tuberculin testing in cattle

4.2 Bacterial Sporulation

4.3 General properties of fungi

4.4 Methods of transmission of infections

4.5 Cultural isolation and diagnosis fungal diseases

4.6 Bacterial transduction

4.7 Developmental cycle of chlamydia

4.8 Diagnosis of heamorrhagic septicaemia

Q.5 Answer the following question in 1-2 pages (attempt any two).

(2x12.0 = 24)

5.1 A). Define Bacterial Growth and Growth curve. (2)

B) Explain various stages of bacterial growth curve in details. (10)

5.2 A) Enlist the different species of Brucella affecting domestic animals. (2)

B) Explain the morphology and cultural characteristics of *Brucella* spp. (4)

C) Write diagnosis and control of brucellosis in animal. (6)

5.3 A) Define PCR and write its different types. (3)

B) Enlist the essential requirement of perform the PCR. (4)

C) Explain the various cyclic condition in details. (5)

B.V.Sc. & A.H. (Second Professional) Examination – 2024
Veterinary Microbiology Paper -II

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-4 (Veterinary Immunology and Serology)
Unit-5 (General and Systematic Veterinary Virology)

Instructions:

1) Attempt all questions
2) Answer of all questions is to be written in the space provided along with the question in question-booklet.
3) Overwriting is not allowed in the objective type question.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 Body cells, tissues and organs arise from _____

1.2 The basis of cellular immunity was put forth by _____

1.3 Red nose in cattle is caused by _____

1.4 Cattle plague is also known as _____

1.5 Duck viral enteritis is caused by _____

1.6 Inoculation of _____virus leads to stunting and curling of embryonated chicken egg.

1.7 Receptor binding site of coronavirus is present in _____

1.8 Generally, antigens are administered by_____route to induce stronger immunity

1.9 Molecule that coat foreign particle and promote phagocytosis is called_____

1.10 Cell abnormalities resulting from a viral infection are called _____

1.11 An enzyme from HIV that can make a copy of DNA from RNA is called ____

1.12 Hinge region is rich in amino acid_____

1.13 Second line of defense of immunity is known as _____

1.14 Secretary antibody is known as _____

1.15 The macrophages of lungs are known as _____

1.16 The MHC molecule in human is called as _____

1.17 J chain is present in which antibody _____

1.18 In late fetal life which are the organs of haemopoises_____

1.19 Programmed cell death is known as _____

1.20 IgE antibody is also known as _____

Q.2 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (20x0.5 = 10)

2.1 Enveloped virions having helical circular nucleocapsid with a genome three segmented negative sense RNA are the characteristic of… ( )
1. Bunyaviridae
2. Arenaviridae
3. Orthomyxoviridae
4. Flaviviridae

2.2 The animal disease that has been eradicated from India is ( )
1. RP
2. ASF
3. FMD
4. RD

2.3 First viral disease of human beings detected was ( )
1. Rabies
2. Yellow fever
3. Small pox
4. Influenza

2.4 Apthous virus is inoculated in guinea pig by the following route ( )
1. Intramuscular
2. Intranasal
3. Intraperitoneal
4. In foot pads

2.5 Malignant Catarral fever is caused by ( )
1. Bovine Herpesvirus 1
2. Orthomyxovirus
3. Bovine Herpesvirus 2
4. Paramyxovirus

2.6 The direct method of study of bacteriophage is by ( )
1. Electron microscopy
2. Plaque study
3. Serological testing
4. Lysogenic conversion

2.7 The virus that produces intracytoplasmic as well as occasional intranuclear inclusion bodies ( )
1. ICH
2. CD virus
3. Rabies virus
4. Canine parvo virus

2.8 The protein shell which encloses the viral nucleic acid genome is ( )
1. Capsomere
2. Capsid
3. Nucleocapsid
4. None

2.9 Ephemeral fever virus belong to the family ( )
1. Filoviridae
2. Paramyxoviridae
3. Rhabdoviridae
4. Picornaviridae

2.10 Which of the following is true with paramyxoviridae ( )
1. Enveloped; Helical; ss-RNA
2. Naked; Cubical; ss+RNA
3. Enveloped; Cubical; ss-RNA
4. Naked; Helical; ds RNA

2.11 In the spleen the lymphoid tissues are mainly located in the ( )
1. White Pulp
2. Red Pulp
3. Marginal Zone
4. Sinusoids

2.12 Pattern recognition receptors bind to ( )
1. B & T cells
2. MHC I molecules.
3. PAMP
4. Natural killer cells

2.13 Which virus was used in smallpox vaccination? ( )
1. Variola
2. Cowpox
3. Vaccinia
4. Varicella

2.14 A virus associated with chronic liver infection and cancer is ( )
1. Hepatitis C
2. Hepatitis A
3. Hepatitis B
4. Delta agent

2.15 The protein which is located to the inside of the capsid of FMD virus is ( )
1. VP 1
2. VP 2
3. VP 3
4. VP 4

2.16 An example of an exogenous pyrogen is ( )
1. Interleukin-1
2. Interferon
3. Complement
4. Endotoxin

2.17 Which subset of WBCs accounts for acquired, specific immunity ? ( )

1. Monocytes
2. T cells
3. B cells
4. Both b and c

2.18 Widespread immunity that protects the population from the spread of disease is called. ( )

1. Seropositivity
2. Epidemic prophylaxis
3. Cross-reactivity
4. Herd immunity

2.19 An example of an *in vivo* serological test is ( )

1. Indirect immunofluorescence
2. Radioimmunoassay
3. Tuberculin test
4. Complement fixation

2.20 A positive tuberculin skin test is an example of ( )

1. Delayed-type allergy
2. Acute contact dermatitis
3. Autoimmunity
4. Eczema

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Inactive vaccine

3.2 Interferons

3.3 Virion

3.4 PPR

3.5 Adaptive Immunity

3.6 Immunotolerance

3.7 Antigen

3.8 Negribodies

3.9 Prions

3.10 AGPT

3.11 Autoimmunity

3.12 Vaccine

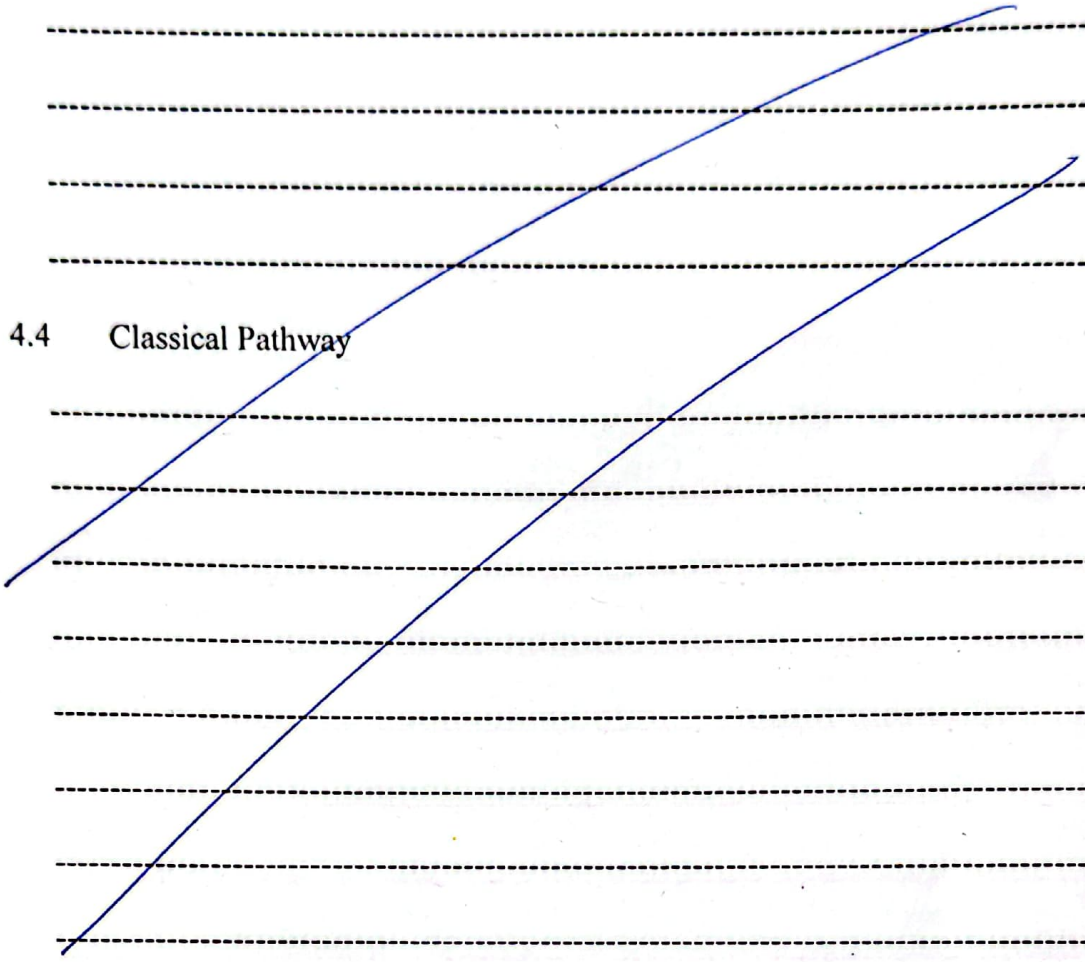
Q.4 Attempt any <u>six</u> out of the following eight questions. Answer of each question should be in 8 to 10 lines. (6 x 6.0 = 36)

4.1 TLR

4.2 Icosahedral Symmetry

4.3 Hypersensitivity-I

4.4 Classical Pathway



4.5 Families of dsDNA virus

4.6 Cultivation techniques of virus

4.7 APC

4.8 Genetic Reassortment

Q.5 Answer the following question in 1-2 pages (attempt any two). (2x12.0 = 24)

5.1 Describe in brief etiology, pathogenesis, diagnosis and control of FMD

5.2 Draw well labelled structure of antibody and write the classification and physiochemical properties and function.

5.3 What is hybridoma technology? Explain different steps of Monoclonal antibody production and its application.